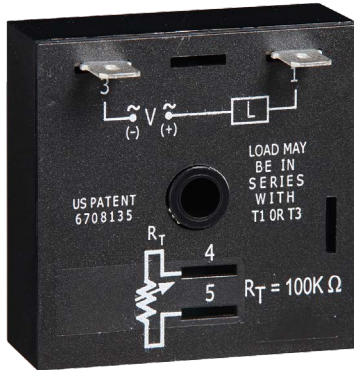
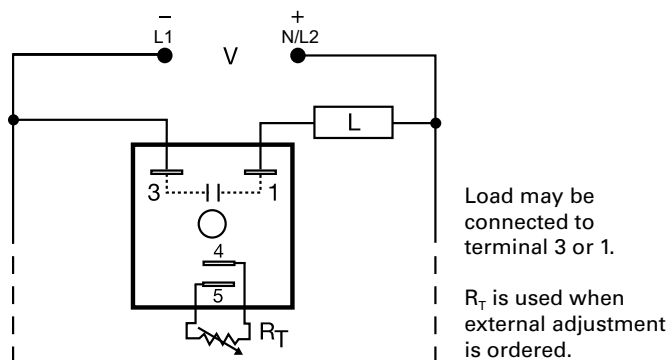


TSD1 SERIES

Delay-on-Make Timer



Wiring Diagram



Description

The TSD1 Series is designed for more demanding commercial and industrial applications where small size and accurate performance is required. The factory calibration for fixed time delays is within 1% of the target time delay. The repeat accuracy, under stable conditions, is 0.1% of the time delay. The TSD1 Series is rated to operate over an extended temperature range. Time delays of 0.1 seconds to 100 hours are available. The output is rated 1A steady and 10A inrush. The modules are totally solid state and encapsulated to protect the electronic circuitry.

Operation (Delay-on-Make)

Upon application of input voltage, the time delay begins. The output is de-energized before and during the time delay. At the end of the time delay, the output energizes and remains energized until input voltage is removed.

Reset: Removing input voltage resets the time delay and output.

Features & Benefits

FEATURES	BENEFITS
Microcontroller based	Repeat Accuracy +/- 0.1%, +/- 1% time delay accuracy
Extended temperature range	Rated to 75°C operating temperature to withstand high heat applications.
Compact, low cost design	Allows flexibility for OEM applications
1A Steady solid-state output, 10A inrush	Provides 100 million operations in typical conditions.
Totally solid state and encapsulated	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity

Accessories

P1004-95, P1004-95-X Versa-Pot
Panel mountable, industrial potentiometer recommended for remote time delay adjustment.

P1023-6 Mounting bracket
The 90° orientation of mounting slots makes installation/removal of modules quick and easy.

P0700-7 Versa-Knob
Designed for 0.25 in. (6.35 mm) shaft of Versa-Pot. Semi-gloss industrial black finish.

P1015-64 (AWG 14/16) Female Quick Connect
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

P1015-18 Quick Connect to Screw Adapter
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.

Ordering Information

MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY
TSD1311.2S	24VDC	Fixed	1.2s
TSD1321	24VDC	External	1 - 100s
TSD1424	120VAC	External	1 - 100m

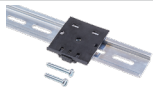
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TSD1 SERIES

Accessories

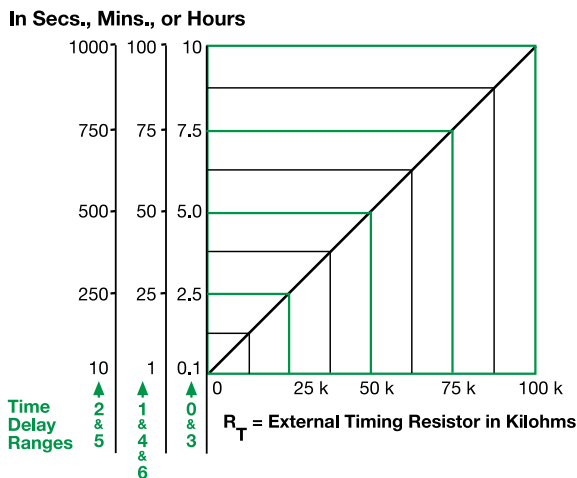


C103PM (AL) DIN Rail
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



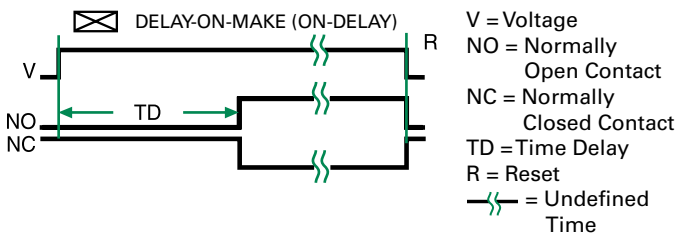
P1023-20 DIN Rail Adapter
Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

External Resistance vs. Time Delay



This chart applies to externally adjustable part numbers. The time delay is adjustable over the time delay range selected by varying the resistance across the R_T terminals; as the resistance increases the time delay increases. When selecting an external R_T , add the tolerances of the timer and the R_T for the full time range adjustment.
Examples: 1 to 50 S adjustable time delay, select time delay range 1 and a 50 K ohm R_T . For 1 to 100 S use a 100 K ohm R_T .

Function Diagram



Specifications

Time Delay Range	0.1s - 100h in 7 adjustable ranges or fixed
Repeat Accuracy Tolerance (Factory Calibration)	±0.1% or 20ms, whichever is greater
Recycle Time	≤ ±1%
Time Delay vs. Temperature & Voltage	≤ 150ms
Input Voltage	≤ ±1%
Tolerance	12, 24, 120VDC; 24, 120, 230VAC
AC Line Frequency	±20%
Output Type	50/60 Hz
Form	Solid state
Maximum Load Current	NO, open during timing
Minimum Holding Current	1A steady state, 10A inrush at 60°C
Off State Leakage Current	≤ 40mA
Voltage Drop	≈ 7mA @ 230VAC
Protection Circuitry	≈ 2.5V @ 1A
Dielectric Breakdown	Encapsulated
Insulation Resistance	≥ 2000V RMS terminals to mounting surface
Polarity	≥ 100 MΩ
Mechanical Mounting	DC units are reverse polarity protected
Dimensions	Surface mount with one #10 (M5 x 0.8) screw H 50.8 mm (2"); W 50.8 mm (2"); D 30.7 mm (1.21")
Termination	0.25 in. (6.35 mm) male quick connect terminals
Environmental Operating/Storage Temperature	-40° to 75°C / -40° to 85°C
Humidity	95% relative, non-condensing
Weight	≈ 2.4 oz (68 g)

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